BEFORE THE

Federal Communications Commission

WASHINGTON, D.C. 20554

In the Matter of Amendment of Part 90 of the Commission's Rules to Provide for the Use of the 220-222 MHz Band by the Private Land Mobile Radio Service	)	PR Docket No. 89-522 RM-8506
Implementation of Sections 3(n) and 322 of the Communications Act	)	GN Docket No. 93-252
Regulatory Treatment of Mobile Services	)	DOCKET FILE COPY ORIGINAL
Implementation of Section 309(j) of the Communications Act -- Competitive Bidding, 220-222 MHz	)	PP Docket No. 93-253

TO: The Commission

COMMENTS OF FAIRFIELD INDUSTRIES, INC.

Fairfield Industries, Inc. ("Fairfield"), by its counsel, hereby submits its comments in response to the Second Memorandum Opinion and Order and Third Notice of Proposed Rulemaking in the above-captioned proceedings (the "Notice"; FCC 95-312, released August 28, 1995).

I.

BACKGROUND

The Notice proposes a new framework for licensing the 220-222 MHz band. This framework would include the auction of channels on a regional, Economic Area and, possibly, national basis; the licensing of channels greater than 5 kHz if the aggregated channels are contiguous and spectrum efficiency is equivalent to that achieved with individual 5 kHz channels; and elimination of the requirement that temporary, fixed use of 220-222 MHz channels be only ancillary to a primary land mobile purpose.

Fairfield had urged the "ancillary use" revision in its June 1994 Petition for Rulemaking (RM-8506). In particular Fairfield requested that Rule § 90.731 be modified so as to allow geophysical telemetry for oil and gas exploration to be conducted in this band on a secondary, non-interference basis to primary land mobile users.

In support Fairfield observed that telemetry operations in the immediately adjacent 216-220 MHz band were increasingly constrained by Automated Maritime Telecommunications Service communications and would be further constrained by the licensing of Interactive Video Data Service facilities in the 218-219 MHz portion of the band. Fairfield stressed that there was virtually no risk of interference to primary users: oil and gas exploration typically occurs in remote, uninhabited areas such as swamps, marshes, and offshore waters; telemetry transmitter antennas are only six feet above the surface, are omnidirectional and are affixed directly to the transmitter; and these

transmitters operate with a very low power level of less than two watts and with duty cycles measured in seconds. Perhaps most importantly, Fairfield noted that telemetry receivers are extremely sensitive so as to detect the weak incoming signals; that telemetry data is easily degraded or destroyed in the presence of interference; and that, accordingly, before commencing operations the user is required to monitor the spectrum carefully. Should any signals be detected, the operator avoids the subject channel entirely. In other words geophysical telemetry is self-policing. It is for these reasons that Fairfield is unaware of any interference being caused by its 216-220 MHz operations.

II.

DISCUSSION

Fairfield is gratified that the Commission has seen fit to adopt the temporary fixed use proposal. Fairfield urges the Commission to take action on the proposal -- a simple and straightforward one -- as soon as possible.

Such action would further one of the Clinton Administration's policy priorities, i.e. boosting markets for domestic oil and gas while reducing our dependence on foreign sources. In this regard the Department of Energy has stressed the importance of deploying advanced exploration and production technologies.[1] One of those technologies is the use of three-dimensional ("3D") geophysical surveys to locate

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[1] See The Domestic Natural Gas and Oil Initiative: Energy Leadership in the World Economy (December 1993).

previously undisclosed reserves. The changes proposed here would facilitate the use of 3D survey techniques.[2]

The use of radio to obtain 3D "pictures" of the earth's structure many thousands of feet below the surface represents a development of the radio art and technology in ways which fall squarely within the thrust of Section 7 of the Act. 47 U.S.C. Section 157. That Section directs the Commission to give priority to proposals such as Fairfield's for new technologies and services using radio. Adoption of the proposal would also further the Commission's mandate to "encourage the larger and more effective use of radio in the public interest." 47 U.S.C. Section 303(g). Accordingly, Fairfield urges the agency to complete action on its proposal as soon as possible and issue a ruling thereon, rather than awaiting resolution of all of the primary usage issues raised in this large item.

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[2] Two dimensional survey methods typically entail a survey grid with quarter-mile or half-mile intersecting lines; a 3D survey, by contrast, might have spacings as low as 110 feet resulting in a much higher level of subsurface resolution. To illustrate: at present Fairfield is able to collect data from two geophones/hydrophones (two "traces") per radio channel. With the 200 channels available in the 216-220 MHz band, this means that Fairfield is theoretically able to collect data for 400 traces on any one shot if every channel were available. However, every channel is seldom available: interference can preclude use of 40, 60, or even 80 channels out of the 200. And this makes no allowance for the greater number of channels required in order to provide higher resolution 3D. Hence, in order to survey any given area utilizing 3D techniques, survey crews will need to spend longer periods of time at sea or in the field, at a cost on the order of $25,000 per day. Indeed, if present trends continue, the cost of conducting 3D radio-based geophysical exploration may become prohibitive. The answer is to make the Rules for additional frequencies from the 220-222 MHz band more "user friendly" as requested here.

Insofar as the details of the secondary fixed use proposal are concerned, Fairfield would offer only one brief comment. The Notice would allow primary licensees to aggregate contiguous 5 kHz channels while maintaining equivalent spectrum efficiency. The Notice does not discuss application of such a requirement to geophysical telemetry and, certainly, the final rules should not so apply. Geophysical telemetry equipment operates on 20 kHz channels in the adjacent 216-220 MHz band. This allows survey crews to operate with maximum flexibility, users being able to specify power, emission characteristics, data through-put and antenna characteristics, among other variables. No restrictions are placed on telemetry channeling. See Rule 90.259.

Telemetry operators do not have the luxury of aggregating contiguous channels. As noted above, before any operation can begin the spectrum is carefully monitored; the presence of an undesired signal on any one channel disqualifies that channel for use in the survey. In order to amass as many channels as possible (the greater the number of channels, the better being the subsurface resolution), the operator needs maximum flexibility. Channels may be used from all over the band, many of which may not be contiguous. Requiring a telemetry operator to aggregate only contiguous channels, or to operate with a spectrum efficiency at variance from that which has obtained in the 216-220 MHz band, would greatly diminish operational flexibility and the utility of the 220-222 MHz band for the intended purpose.

III.

CONCLUSION

For the foregoing reasons, Fairfield urges prompt and favorable action on the secondary fixed use proposal without the unnecessary delays that may attend resolution of the primary usage issues raised in the Notice.

Respectfully submitted,

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